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Effect of metal ions on polyketide biosynthesis in *Paraphaeosphaeria quadriseptata*

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In a study to maximize diversity of metabolites in the Sonoran desert plant-associated fungal strain, *Paraphaeosphaeria quadriseptata*, the effect of trace metals on the biosynthesis of polyketides was investigated. When cultured in PDA (solid medium) this fungal strain was found to produce the nona-ketide, monocillin I (1), as the major metabolite together with paraphaeosphaerins A - C.2 In PDB (liquid medium) prepared with tap water 1 was found to be the major constituent, but when the culture medium was prepared with distilled water, production of 1 was found to be inhibited. Under these conditions six new polyketides - of which the octa-ketide, didehydrocytosporone B (2), was the major - were produced by this organism and were identified by spectroscopic data and chemical interconversions. As the analysis of tap water used above showed the presence of trace metals, Cu, Cd and Cr, the effect of these on production of 1 and 2 were also investigated and the results revealed that these ions caused the fungus to produce 1 as the major constituent.

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2. Wijeratne, E. M. K.; Paranagama, P. A.; Gunatilaka, A. A. L. *Tetrahedron*, 2006, 62, 8439-8446.

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